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(74) Agent Seong-Gu Jang (72) Inventor Chae-Yeol Im
U-Seong Jeon

(71) Applicant MUNHWA BROADCASTING CORP. Deuk-Ryeol Lee

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(54) THE PART IS DATA TRANSMISSION PROCESS OF THE DIGITAL BROADCASTING SYSTEM FOR DATA SERVICE.

Abstract

Machine Translation | Human Translation

1 The present invention relates to data transmission process in the satellite broadcasting system, and first data related to the program, and the electrical transmission packet are selected and second data, generally to be provided the first supplementary data:, relating to the broadcasting program to the third *** for serving the software or data in the information about an internet or a receiver in the specific number fresh air the second supplementary data: which at the same time, it provides for all auditions and third supplementary data provided to the specific receiver are more included to RSMS data for the program guide, and all viewers in the urgency in other words. That is, the present invention has the effect that the service various since maintaining data construct for the existing internet even though the transceiving of supplementary data is easy is possible. .

Machine Translation | Human Translation

PURPOSE: A method of transmitting data of a digital broadcasting system is to allow a receiver to facilely display addition data related to a receiving program and program guiding program data, thereby facilely transmitting and receiving the additional data.

CONSTITUTION: The first data is related to a current receiving program. A RSMS data selects a transmitting packet and guide the program. The second data is data to be urgently or generally provided to a viewer. The third data are only provided to a certain receiver. The first additional data is related to a broadcasting program. The second additional

data is provided to all viewers. The third additional data is provided only to a certain receiver. The first, second and third additional data are written by HTML(Hyper Text Markup Language) or JABA to be retrieved. The first additional data transmits a PID(Process Identifier) of the packet to a receiver using a PMT descriptor. The second additional data transmits the PID of the packet to a receiver using a sub data descriptor.

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Representative Drawing(s)

Fig. 4

Descritption

Brief explanation of the drawing

2 Fig. 1 is a drawing showing *** example of the PMM table

3 Fig. 2 is a drawing showing the reference model of the satellite broadcasting system

4 Fig. 3 is a block diagram of the satellite broadcast receiver for the present invention

5 Fig. 4 is a drawing showing the transport packet of supplementary data consisting of one file

6 Fig. 5 is a drawing showing one example of the supplementary data 1 service.

7 *The description of reference numerals of the main elements in drawings*

8 1: channel decoder 2: MPEC-2 transport decoder.

9 3: display scrambler 4: MPEC 1,2 decoder.

10 5: central processing unit 6: memory.

11 7: modem 8: smart card.

Details of the Invention

Purpose of the Invention

The Technical Field to which the Invention Belongs and the Prior Art in that Filed

12 The present invention relates to digital video broadcast program guide data, more particularly, to the method making the transceiving of data for same data and program guide and urgent data etc. the program and the close relation of the broadcast received in the digital video broadcast possible.

13 Presently, it is the same in the table 1 if the feature of the Mugunghwa satellite broadcasting system of Korea is judged.

14 [Table 1]

15 The feature of the Mugunghwa satellite broadcasting.

16 As to the content of the possible TV broadcast service which is initiated through the digital satellite broadcast of Korea, it is the same as that of the next time.

17 1.Wide width screen electrical transmission:

18 In the satellite broadcasting, the aspect ratio of a screen is planning to perform 4:3 and 16:9 persons the wide TV broadcast. The effect that a presence is marked since a screen is □□□ expanded and just seems to look at a movie is paved. The transmitted Yoo gelatinization fraction of an image is altogether 720x480 with 4:3 and 16:9. But the fan / scan (PAN/SCAN) information is inserted into the image elementary steam for 4:3 transistorized television receiver when transmitting 16:9 screen. The fan / scan (PAN/SCAN) information is the information indicating the domain which 4:3 transistorized television receiver display.

19 2.Caption service(close caption)

20 As to the caption service (close caption), the display the on/OFF is the dialogue or the operation of the man appearing in the bottom (the need to which a location is to be fixed is a none) of a screen possible with a caption with a thing according to the selection of a viewer. In U.S. as the service for the caption of the auditory disabled person and foreign currency, this is used for the ground wave TV. And it is planning to perform in the national in the satellite broadcasting. Presently, in the ground wave TV of the national, because of not performing the caption service, it is the state where the state does not have the domestic standard. Therefore, EIA-608 is followed all form and code about thises until the domestic standard is determined.

21 As to the digital satellite broadcast of Korea, in order to transmit these in the form of the packet while following the standard for the video of the MPEG1 which is the international video compression and MPEG2 and audio compression and reconstitution, the compression mode of the video audio of the digital video broadcast employs the MPEG2 transport packet standard. Moreover, in the standard of the digital satellite broadcast of Korea, the program guide information is transmitted with the PAT, PMT, NIT, EIT, SDT, TDT while like that maintaining the transport packet structure of MPEG2 for the program guide. As to this structure, it is the same as that of the next time.

22 The content are as follows: if it is PAT defined in the MPEG2 system layer (system layer) (ISO/IEC 133818-1), and the content of PMT and CAT ***.

23 Offer information the PAT (Program Association Table) :PMT and NIT packet.

24 PID of EMM for the CAT (Conditional Access Table) :CA system is provided.

25 PMT(Program Map Table): PID of the ECM packet and the packet in which the packet has the video audio packets (Video/Audeo packet) and PCR is provided.

26 As to the program guide information which is defined in DVB and used in the satellite broadcasting of Korea, it is the same as that of the next time.

27 NIT(Network Information Table): the information for the autotune (Automatic tuning) is provided. That is, the number of the relay of the corresponding broadcast and ECC coding method are provided to provide the configuring information of the

physical network.

28 SDT(Service Description Table): it illustrates for the service included within the service about the satellite broadcasting network or the specific transport stream. Each SDT section provides data belonging to one prescribed transport stream. SDT can use to prepare the program guide.

29 EIT(Event Information Table): the information toward the event of all HDTV satellite broadcast channels are chronologically provided. Each EIT section provides shift, data relating to the arbitrary channel about one service ID (service□id). EIT provides the program guide information. It is comprised in order to provide the transfer interval (the time between the next electrical transmission of the same program information) about PID of program guide cycle (the start time and occupancy) which the number of PID which EIT is used in order to transmit the program information, and PID of each EIT provide and each EIT.

30 It has with the TDT (Time Data Table) : UTC- time and day information.

31 It could be called the program guide information of the meaning that the EIT information became small. It had the differential transfer period according to the guided time slot and it transmitted with EIT1,2,3 with 4.

32 Program announcements supplementary data for the program guide are included. As to a receiver, by using this additional data, it makes the program guide screen so that a subscriber select the program. Supplementary data is used for the automatic tuning of the digital broadcasting carrier wave about the selected programs. Supplementary data for providing the program guide information does less than 512kbytes.

33 PID about PMM (NIT, and SDT and TDT) table can find in PAT relating to the program number 0. The number of EIT tables and PID relating to the corresponding EIT table can find in the EIT coding descriptor (config descrptor) included in NIT. *** example of the PMM table is schematized in
Fig. 1.

34 But in this kind of conventional mode, it does not have the function sending and receives the supplementary data related to the program receiving at present to the only in which it is defined only data for the program guide or sends and receives urgent data.

35 Moreover, there is a problem that in the conventional mode, the manufacture of the receiver for an illustration is program guide data difficult since the method for an illustration is not included in data in case of a receiver receiving data for the program guide and to showing.

36 That is, in the Mugunghwa digital satellite broadcast, since it was defined only data for the program guide it received at present and it did not have the function sending and receives supplementary data ***ing with the program or sent and receives urgent data and the point the method for an illustration was not included in data in case of a receiver receiving data for the program guide and showing and that it was a difficult the manufacture of the receiver for the illustration of program guide data had.

Technical challenges of the Invention

37 The present invention is to provide such method of transmission for the loading of data in the specific number fresh air a transmission makes the service various the transceiving of supplementary data is easy possible data construct for the existing internet is maintained data construct of being complicated is avoided in a transmission as to the object of the present invention, a receiver easily can show data for supplementary data ***ing with the program receiving at present and program guide, and urgent data to resolve the above problems, it devises.

38 As to the satellite broadcasting system consisting of first data, RSMS data for the program guide the electrical transmission packet is selected, and second data, it includes with first supplementary data relating to the broadcasting program, second

supplementary data, and the third supplementary data, provided to the specific receiver more. First data the present invention for achieving this purpose relates to the program. Second data generally is provided for all viewers in the urgency in other words and third data for serving the software or data in the information about an internet or a receiver in the specific number fresh air. Second supplementary data at the same time, it provides for all auditions.

▸ Structure & Operation of the Invention

39 Concretely below, and the attached embodiment of the present invention are illustrated.

40 While the elementary stream of 3 branch type being added and to comprising with the elementary stream, in order to provide the additional service proposed in the present invention at this time, as shown in Fig. 2, the reference model of the satellite broadcasting system is comprised.

41 As described above, in data 1 related to each program, and the satellite broadcasting, data and stream data are already implemented and it can select the electrical transmission packet and it does not have RSMS data for the program guide , and each program and conventions but it comprise with data 3 for serving the software or data in the specific number fresh air to all viewers in the urgency in the information about data 2 generally to be provided and internet or a receiver in other words.

42 The content provided through a satellite has the video / audio / data 1 comprised in the program (P1) and RSMS data comprised in the program (P2), and data 3 of data 2 of the program (P3) and program (P4). It is transmitted and it is expressed as HTML or the JABA language and data service illustrated to a viewer is transmitted to the receiving side. As the satellite broadcast receiver (STU) used MHEG-5 in DAVIC by using the appropriate the browser in the receiving side in each receiver, it has to show in a screen. The TV broadcast service is provided through the program (P1) but it uses the general DVB scrambling (Common DVB Scrambling) algorithm for the conditional access.

43 In the present invention, the digital TV part in which a viewer directly could receive a service DAVIC in STU than data service about the interfaced personal computer (PC) through STU intended data service. In STU, while using the other central processing unit (CPU) according to the model of each manufacture company while using only the memory space limited than the personal computer, it is connected to the broadcasting service industry person and line of modem. The configuration diagram of this kind of STU was shown in Fig. 3.

44 That is, STU provides the smart card (8) which is connected to the channel decoder (1), which as shown in the figure, channel-decodes the input signal and the MPEG 2 electrical transmission (Transport) decoder (2), in which the part demultiplexes data stream in the multiplexed stream of the channel decoder (1) and the DVB display scrambler (3), doing the signal of this MPEG transport decoder with the display scrambling and the MPEG 1,2 decoder (4), decoding an audio and video signal of this MPE transport decoder (3) and the memory (6): of being connected to the MPEG transport decoder (2) and central processing unit (5) and the modem (7) connecting the central processing unit (5) and broadcast service dealer and is connected to the central processing unit (5).

45 As shown in Fig. 2, the satellite broadcast receiver can download the additional data service from the broadcast dealer through a satellite.

46 The broadcast dealer multiplexes supplementary data like the other different programs and it transmits a message to the MPEG2 transport stream (Transpotr stream). A receiver outputs the stream demultiplexed to the personal computer which in some cases, is connected to an outside while the part demultiplexes data stream in the stream which is multiplexed by using the MPEG2 transport decoder (2) and CPU within STU processes this content, and VCR or *** apparatus. As to the memory of STU, since the content of all supplementary datas that are the restrictive and are broadcasted unable to being stored, it has to find out the efficient method for the additional service.

47 As to the supplementary data 1, when a viewer demands this, the part decodes data information and the part provides the viewer in which the part relating to the broadcasting program watches the program to data service with the information

relating to the program or it receives additional information data regardless of the will of a viewer and it can execute. The service and the service showing up regardless of the will are transmitted to the transmission packet having the different PID a viewer demands the additional information, shows up.

48 When a viewer demands the additional information in case of the service which a viewer demands the additional information, shows up after whether it is to a viewer or not firstly forcing a viewer, that the corresponding additional information ***s the file corresponding to the home page of the corresponding additional information is executed.

49 In PID of the packet in which the home page of the additional information ***s is PMT, by informing to STU and using HREF of HTML in the form of the descriptor, each files are linked. PID of the packet in which each files ***ed was designated and by using HREF, the concrete method for linking files described later.

50 In STU, for connecting each files in the web and searching the method for and then executing the additional information firstly after executing supplementary data of the home page is comprised identically with the method.

51 In this way, the supplementary data 1 is classified into the Direct Sub Data1 and Indirect Sub Data1 according to the possibility of intervention of a viewer before practicing.

52 As to the supplementary data 2, when being used as the method for delivering the urgent content to data service for enforcing against the whole receiver of the content of the program receiving or delivering the information for the content that the broadcast dealer tries to inform a viewer or the other public or to renewing the software of STU, the software is used. Moreover, the supplementary data 2 service can be used for the program guide except method using the ETS 300 468. By implementing by using HTML or the JABA language performed regardless of the edge kind hardware and CPU rather than the program guide is to the fixed standard various forms of program guides are possible. It is classified into the Direct Sub Data2 and Indirect Sub Data2 according to whether or not which also is performed by the will of a viewer like the case of the supplementary data 1 with the supplementary data 2.

53 As to the supplementary data 3, when providing one data service against the specific number fresh air or to delivering the particular content to the specific receiver, it is used. For example, in the part is data service 1 or 2, the viewer who satisfactorily is unable to obtain the fill *** information requires more information to the broadcast dealer through the line of modem and required information are transmitted among a broadcast to additional information but VOD uses such method and such method can be implemented. Moreover, it can inform on a broadcast in case of noted paying the entrance fee or the subscription. It is classified into the Direct Sub Data3 and Indirect Sub Data3 according to whether or not which also is performed by the will of a viewer like the case of the supplementary data 1 with the supplementary data 3.

54 According to the character and use, supplementary data is one file or it is comprised of several files. This additional information datas load to the transport packet and it is multiplexed with *** audio and video data to the MPEG2 transport stream and it is transmitted to a receiver and it is received in a receiver.

55 As to the expression of supplementary data, while being finally illustrated by using MHEG-5, for this, the expression of supplementary data has to use HTML or JABA having nothing to do in the specific hardware or the central processing unit. And it excludes in case of the download of the download of transfer data in which the final result uses MHEG-5 and which is not illustrated or the software.

56 There can be the means which tries to know at a receiver whether it is transmitted and or not can do and inform that it is connected in some cases, when PID is transmitted to the other transmission packet as a kind and transport packet of data which is transmitted in order to transmit this supplementary data.

57 According to the kind of supplementary data, data are comprised of one file or data are comprised of several files. Firstly by using TAR in case of being comprised of several files, several files are comprised of one file and the PES packet is loaded to data byte part of the electrical transmission packet and it transmits the DAVIC 1.0 standard (specification) after the PES packetized (packetization) process of the private stream 1 (private stream1). It is the process of being like that *** in

Fig. 4.

58 It is the same as that of the table 2 if this process is looked into with the syntax. Supplementary data consists of the file of the PES unit or the file is comprised of several PESs and it divides in the payload of the MPEG2 transmission packet (transport packet) which is the maximum 184 byte and it transmits.

59 [Table 2a]

60 The syntaxd of the Transport packet.

Table 1

Syntax	Bit number	It is prescribed
transport_packet(){		
sync_byte	8	0x47
transpotr_error_indicator	1	x
payload_unit_start_indicator	1	x
transport_priority	1	x
PID	13	x
transport_scrambling_control	2	x
adaptation_field_counter	2	x
continuity_counter	4	x

61 [Table 2b]

Table 2

if(adaptaiton_field_control=='10'□ adaptation_field_control=='11'){		
adaptation_field()		
}		
if(adaptation_feld_control=='01'□ adaptation_feld_control=='11'){		
for(i=0;i□N;i++){		
data_byte	8	x
}		
}		
}		

62 As to the private stream 1 (private stream1) PES packet form the TAR measure portrait of a king part as to data file, is transmitted to the PES packet form of the private stream 1 (private stream1) the DAVIC 1.0 standard (pecificaton), it is the same as that of the following table 3.

63 [Table 3]

64 The syntax of the Private stream 1 PES packet.

Table 3

Syntax	Bit number	It is prescribed
private_stream_1_PES_packet(){		
private_stream_1_PES_packet_header()		
data_identifier	8	x
private_stream_id	8	x
private_stream_version_number	8	x
private_PES_packet_data()		
}		

65 The private stream 1 PES packet header(), data identifier, and the private stream id and pivate PES jpacket data() are the same in the DAVIC 1.0 standard (specification) and in order to show to be updated to new datas in which the corresponding private stream was the thing of the previous and, it adds in the private stream 1 PES packet and the private stream version number uses.

66 In the meantime, the PSI information of MPEG2 is used for a transport packet in the electrical transmission so that supplementary data of any kind of kind inform to the *** receiver. Firstly, it is known with the video within the PMT (program Map Table) designated on PID ***ing with the program which a viewer looks and listen of the supplementary data 1, and PID of the audio packet. The supplementary data 2 informs PID of the supplementary data 2 by using the descriptor (descriptor) () within NIT. The supplementary data 3 is transmitted PID of a packet per a row when communicating with the transmitter side through the line of modem.

67 The supplementary data 1 saves through the method for being the same as if the video audio packet identifier of the program decodes and saves PAT and PMT. While being used like the next as been prescribed in the suitable program, that is, the ISO / IEC 13818-1 (MPEG-2 system standard) about the program number, PID of the PID value of the video audio of the suitable program and supplementary data 1,2 and caption data are transmitted to the form as follows.

68 [Table 4]

69 The syntax of the PMT section.

Table 4

Syntax	Bit number	The value used
TS_program_map_section(){		
table_id	8	0x02
section_syntax_indicator	1	1
0	1	0
reserved	2	11
section_length	12	x
program_number	16	x
reserved	2	11
version_numbdr	5	x
current_next_indicator	1	x
section_number	8	x
last_section_number	8	x
reserved	3	111

PCR_PID	13	x
reserved	4	1111
program info_length	12	x
for(i=0;i□N;i++){		
descriptor()		
}		
for(i=0;i□N1;++){		
stream_type	8	x
reserved	3	111
elementary_PID	13	x
reserved	4	1111
PMT_info_length	12	x
for(j=0;j□N2;j++){		
PMT_descriptor();		
}		
}		
CRC32	32	x
}		

70 By using the stream type (stream type) within the PMT section, the basis (elementary) PID which and then, comes shows PID of the transport packet of any kind of kind. That is, the price which is prescribed in order to show corresponding data among the value of the case 0 x 80-0 xFF of using 0x07 specific figure while using 0x04 in case of 0x02 MPEG2 audio in case of being MPEG2 image (video) in case the additional data 1 is decoded in the form of MHEG is used. Moreover, in order to have the corresponding packet make the link while the corresponding PID shows PID of the supplementary data 1 by using HREF the corresponding packet by using the PMT descriptor if the corresponding PID shows PID of the supplementary data 1 by using HREF, the logical name is expressed. As to this PMT descriptor, it is the same as that of the table 5.

71 [Table 5]

72 The syntax of the PMT descriptor (syntax)

Table 5

The PMT descriptor syntax	Bit number
PMT_descriptor(){	
descriptor_tag	8
descriptor_length	1
for (i=0; i□length;i++){	1
direct)_indirect	1
reservde	7
packet_logical_name	16
}	
}	

73 While the service of the supplementary data 1 classifies the Direct Sub Data1 service or the Indirect Sub Data1 service, when connecting a file by using the use complementary HREF, it uses the packet logical name, the packet logical name is 0x70

and for example, it connects a file to the corresponding Private stream 1 PES the direct indirect is the news html.

74 The corresponding file is connected by using the HREF=0x70 / news html.

76 In the meantime, as shown in table 6, PID of the packet in which the supplementary data 2 is delivered can be designated by using the sub data descriptor of NIT.

77 [Table 6]

78 The syntax of the Sub Data descriptor.

Table 6

The Sub Data descriptor syntax	Bit number
Sub_Data_descriptor(){	
descriptor_tag	8
descriptor_length	8
for (i=0;i□length;i++){	
reserved	2
direct_indirect	1
Sub_data2_PID	13
}	
}	

79 As to the direct indirect, while data service classifies the Direct Sub Data2 service or the Indirect Sub Data2 service, the part uses the Sub Data2 PID like the case of the supplementary data 1 and data of the target service designates *** MPEG2 transmission packet (Transport packet).

80 In case of the supplementary data 3, by using the transport decoder of a receiver while the PID value of the transmission packet (Transport packet) of data which at this time, is transmitted is designated to be made to be transmitted the target service which the specific number fresh air requests through the corresponding electrical transmission packet through the broadcasting channel since being the service transmitted in the specific number fresh air by using the bothway communications of the line of modem, the corresponding data packet is decoded and the service of the supplementary data 3 is transmitted. In the telecommunication method through the line of modem, it can have the various and here it mention.

81 In an internet, the part corresponding to supplementary data comprises with HTML or the JABA language which the part corresponding to supplementary data extensively uses and the part corresponding to supplementary data inserts in the broadcasting transport stream to the program association data section or the TAR file format according to the enforcement of the MPEG 2 (ISO/IEC 13818-1) of the transport packet in data byte and it puts. Supplementary data received in a receiver can visit the information in which a viewer wants to the method as shown in Fig. 5, for searching an internet to the web browser (Web-browser) while being overlapped with the program receiving at present and being illustrated by using the remote controller of a receiver the menu comprised in a screen. This additional information datas are comprised of the file of the respective unit and it loads these to the transport packet and it transmits with a receiver with the corresponding audio and video data. In front of, as described above, whether supplementary data of a video and corresponding audio ***s in a transport packet or not informs to a receiver in the electrical transmission to the PMT packet.

82 As to the transmitted supplementary data 1, in a receiver, data service of the part is initiated when the corresponding channel is selected. The middle start file ***ing of a different is selected in an initial and it is performed and a result is illustrated in a screen.

83 Fig. 5 shows one example of the supplementary data 1 service. The content the initial display of the supplementary data service screen shows up when a viewer wants in case the part together loads the booking sheet for the famous place of sightseeing of the sorak mountain or the sightseeing to the program in case of the program (the drawing 5 a/6) drawing the beautiful display of the sorak mountain with one of the sightseeing program to data service in the form of the supplementary data 1 and the that a viewer and then desires content is broadcasted and is selected.

84 Here, firstly, as shown in
Fig. 5c, the content about the different famous place of sightseeing is indicated on a screen in case of choosing the famous place of sightseeing. Similarly this method can be very made with the screen illustration method for being performed in an internet. In the drawing 5b, the next screen was shown in the drawing 5 d in case of selecting the booking sheet.

85 This has with the number drawing shows the screen of the drawing 5 b. by using the Indirect Sub Data1 of the supplementary data 1 but using the Direct Sub Data1 even if a viewer does not choose.

86 The part uses data service and the caption data service is possible. Because while the program is continued through the additional service in case of caption data, the subtitle data service is continued, until a user cancels this first of all, if a user selects the caption data service, a receiver continuously has to perform a service. The part corresponding to the caption data (closed caption data) can be serviced in the form of the Indirect Sub Data1 of the supplementary data 1.

87 In case of the caption data service, when a receiver selected of the suitable program, it is not soon immediately performed like the Direct Sub Data1 and a demand is received from a viewer and the specific middle file of a different is selected in an initial and ***s a demand is performed and it is overlapped with the program in which a result receives at present and it is illustrated. In case of the caption data service, since the new word is continuously illustrated with the speech of the program to an enemy while the time is over, if the new caption data packet arrives, a receiver receives this by a receiver and a receiver has to show in case of the caption data service.

88 The part uses data service and the service for the various forms of program guides is possible. While nots subordinating to the hardware and CPU by the supplementary data part comprising with HTML or the JABA language which the part corresponding to the program guide extensively uses in an internet,, various forms of guidelines are possible. Program guide data received in a receiver can visit the information in which a viewer wants to the method for searching with the web (Web) of an internet firstly while the file corresponding to the home page is performed when the method has a demand from a viewer and being overlapped with the program in which a result receives at present the supplementary data 1 and being illustrated by using the remote controller of a receiver the menu comprised in a screen. As to this additional information data, while being divided into the different file to the different private stream (Private Stream1) PES packet and being transmitted, by using HREF, it connects different files.

89 The form of the Direct Sub Data2 of the supplementary data 2 service can be used for the urgency caption scanner service. The part corresponding to the deionized water urgent data (emergency data) can visit the information in which a viewer wants to the method for searching with the web (Web) of an internet while the part corresponding to the deionized water urgent data (emergency data) is overlapped with the program which comprises with HTML or the JABA language and which in front of as described above receives at present and it is illustrated by using the remote controller of a receiver the menu comprised in a screen.

90 The VDD service becomes possible since the part applies data service to a particular. If a viewer selects the program of the middle unit after the VOD broadcast dealer makes a list the program canning be served in the form of the supplementary data 2, the selected item is inputted and the item informs PID of the transmission packet (Transport packet) in which the suitable program is loaded to STU and which is transmitted the broadcast dealer to the broadcast dealer through the line of modem. STU is the PID kinds which it is delivered and it demultiplexes the corresponding transport stream and it watches the program.

91 This part as to data service, is used in the method for the media transmitted in not only the satellite broadcasting but also the ground wave digital video broadcast cable digital video broadcast etc. being different and being the same.

92 It has the method for using the private section form of MPEG2 as one method for transmitting above-described various supplementary datas illustrated. The private section of MPEG2 is the method for easily inserting data having various syntax in the MPEG2 transport stream and putting and transmitting. The associated data section (associated data section) is comprised as one form of the private section like a next.

93 [Table 7]

Table 7

For the part is data transmission	Bit number	The value used
associated_data_section(){		
table_id	8	notel
section_syntax_indicator	1	1
private_indicator	1	1
reserved	2	11
section_length	12	x
table_id_extension	16	x
reserved	2	11
version_number	5	x
current_next_indicator	1	x
section_number	8	x
last_section_number	8	x
for(i=0;i□section_length-9;i+4){		
sub_data	8	x
}		
CRC32	32	x
}		

94 The notel:table id is the value in which sub data show supplementary data.

95 As to supplementary data, according to the kind, in each files, each part can put between data file in the sub data field within the associated data section while being comprised of several files. In the associated data section, the part to 256 can transmit data file with a classification while implementing the section of 256 maximums.

96 As to the table id within the associated data section, as prescribed at MPEG2 like the next table while to showing the addition data ID (Identification) which the current associated data section delivers, it uses a value between 0x40-0xFE.

97 [Table 8]

98 The value of the table id prescribed at MPEG2.

Table 8

The value of the Table id	The content of the table id
0x00	program_association_section
0x01	conditional_access_section(CA_section)

0x02	TS_program_map_table
0x03-0x0F	ITU-T Rec.h.220□ISO/IEC 13818 reserved
0x40-0xFE	User private
0xFF	forbidden

99 In the meantime, it has to have the method whether supplementary data of any kind of kind ***s in a transport packet or not for informing in the electrical transmission to a receiver. It varies according to the kind of supplementary data. Firstly, the supplementary data 1,2 and caption data ***ing with the video audio program in which a viewer looks and heard inform to a receiver with the video within the PAT (program Map Table), and PID of the audio packet.

100 PID of PAT is same as those of the thing which is 0x0000 and the syntax is prescribed in the ISO / IEC 13818-1 (MPEG-2 system standard).

101 [Table 9]

Table 9

The PAT syntax	Bit number	The value used
Program_association_section(){		
table_id	8	0x00
section_syntax_indicator	1	1
0	1	0
reserved	2	11
section_length	12	x
transport_stream_id	16	x
reserved	2	11
version_unmber	5	x
current_next_indicator	1	x
section_unmber	8	x
last_section_number	8	x
for(i=0;i□section_length-9;i+4){		
program_number	16	x
reserved	3	111
if(program_number=='0'{		
network_PID	13	x
}		
else{		
program_map_PID	13	x
}		
}		
CRC32	32	x
}		

102 While it is the value designated on the suitable program, that is, the program map PID of PAT of PMT about the program unmber and the syntax is used like the next as been prescribed in the ISO / IEC 13818-1 (MPEG-2 system standard), PID of the PID value of the video audio of the suitable program and supplementary data 1,2 and caption data are transmitted to the form as follows.

103 [Table 10]

Table 10

Syntax	Bit number	The value used
TS_program_map_section(){		
table_id	8	0x02
section_syntax_indicator	1	1
0	1	0
reserved	2	0
section_length	12	x
program_number	16	x
reserved	2	11
version_number	5	x
current_next_indicator	1	x
section_number	8	x
last_section_number	8	x
reserved	3	11
PCR_PID	13	x
reserved	4	1111
program_info_length	12	x
for(i=0;i□N;i++){		
descriptor()		
}		
for(i=0;i□N1;i++){		
stream_type	8	x
reserved	3	1111
elementary_PID	13	x
reserved	4	1111
ES_info_length	12	x
for(j=0;j□N2;j++){		
ES_descriptor();		
}		
}		
CRC32	32	x
}		

104 By using the stream type within the PMT section, the elementary PID which and then, comes shows PID of the transport packet of any kind of kind. That is, the definite value which is prescribed in order to show corresponding data among the value of 0x80-0xFF when showing additional data 1,2 caption data etc. while using 0x04 in case of 0x02 MPEG2 audio in case of being MPEG2 image is used.

105 Since having no concern with the program which urgent data and program guide data watch, it does not transmit PID in the PMT section and it uses the other method. It suggests two methods. Firstly, one can receive the transport packet which always has the corresponding PID value since fixing PID of the program guide packet and urgent data packet and using as urgent data and program guide data. There can be the method for fixing and transmitting PAT like the next as the value

which the other one method points out urgent data and program guide data.

106 [Table 11a]

Table 11

The PAT syntax	Bit number	The value used
Program_association_section(){		
table_id	8	0x00
section_syntax_indicator	1	1
0	1	0
reservde	2	11
section_length	12	x
transpotr_stream_id	16	x
reserved	2	11
version_number	5	x
current_next_indicator	1	x
section_number	8	x

107 [Table 11b]

Table 12

last_section_number	8	x
for(i=0;i□section_length-9;i+4){		
program_number	16	x
reserved	3	111
if(program number=='0'		
network_PID	13	x
}		
elsif(program_unmber==emergency_unmber){		
emergency_data_PID	13	x
}		
elsif(program_unmber==guide number){		
program_guide_data_PID	13	x
}		
else{		
program_map_PID	13	x
}		
}		
CRC32	32	x
}		

108 An emetgency-number and guide unmber are the program number expressing urgent data and program guide data. The emergency PID and program guide data PID show the PID value of the transport packet of urgent data and program guide data. In a receiver, data and program guide data are received to such PID value.

▸ Effects of the Invention

109 As described above, the present invention has the effect that the service various since maintaining data construct for the existing internet even though the transceiving of supplementary data is easy is possible.

Scope of Claims

Claim[1] :

110 The data transmission process of the digital broadcasting system for the addition data service of the satellite broadcasting system consisting of first data related to the program, RSMS data for the program guide the electrical transmission packet is selected, and second data further comprising the first supplementary data:, relating to the broadcasting program the second supplementary data: which at the same time, it provides for all auditions and third supplementary data provided to the specific receiver, and second data generally is provided for all viewers in the urgency in other words and third data for serving the software or data in the information about an internet or a receiver in the specific number fresh air.

Claim[2] :

114 The part is data transmission process of the digital broadcasting system for data service of claim 1, wherein in the first, 2, and 3 supplementary datas, a search is possible as the HTML language.

Claim[3] :

116 The part is data transmission process of the digital broadcasting system for data service of claim 1, wherein in 1,2,3 supplementary datas, a search is possible as the JABA language.

Claim[4] :

118 The data transmission process of the digital broadcasting system for the addition data service equipped with a domain, and the domain provided of the will of a viewer of claim 1, wherein 1,2,3 supplementary datas provide the supplementary data offer or not with the selection of a user.

Claim[5] :

120 The data transmission process of the digital broadcasting system for the addition data service of claim 1, wherein 1,2,3 supplementary datas transmit by using the private stream 1 PES packet (private stream PES packet).

Claim[6] :

122 The data transmission process of the digital broadcasting system for the addition data service of claim 1, wherein 1,2,3 supplementary datas transmit with the aid data section (associaed data section) in the Royal palace by using the private PSI.

Claim[7] :

124 The data transmission process of the digital broadcasting system for the addition data service of claim 1 or 5, wherein first supplementary data delivers PID of a packet to a receiver by using the PMT descriptor (descripter) ().

Claim[8] :

126 The data transmission process of the digital broadcasting system for the addition data service of claim 1 or 5, wherein first supplementary data delivers PID of a kit to a receiver by using the predetermined stream type (stream type).

Claim[9] :

128 The data transmission process of the digital broadcasting system for the addition data service of claim 1 or 5, wherein second supplementary data delivers PID of a packet to a receiver by using the sub data descriptor (SUB Data descripter) ()).

Claim[10] :

130 The data transmission process of the digital broadcasting system for the addition data service of claim 1 or 5, wherein second supplementary data delivers PID of a packet to a receiver by using the fixed program number (program number).

Claim[11] :

132 The data transmission process of the digital broadcasting system for the addition data service of claim 1 or 5, wherein the third portion is data delivers PID of a packet to a receiver by using the PID transceive through the line of modem.